

Haul Roads

Fugitive dusts from haul roads are produced by truck traffic along these roads. When a vehicle travels along a road, the force of the wheels on the road surface causes a re-suspension, and some pulverization, of the surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

Haul roads are generally characterized as a series of volume sources separated by a center-to-center spacing of no more than twice the road width. The following volume source parameters are used to characterize the roads:

Release height = height of the tire

Initial lateral dimension (σ_{y0}) = (2 x road width) / 2.15

Initial vertical dimension (σ_{z0}) = (1.5 x truck height) / 4.3

It should be noted that the volume source parameters may be varied with appropriate justification. The spacing between individual volume sources can be greater than twice the road width provided that the ratio of the minimum source-receptor distance and the spacing between volume sources is greater than 3¹. The emission rate from each volume source will generally be the same, or adjusted in proportion to their volume, and their total must equal the total emissions from the haul road.

Additional information on haul road emissions, especially regarding the effect of mitigating actions on paved haul roads, may be found in Air and Waste Management Association's *Air Pollution Engineering Manual* (chapter 4).

¹User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Volume II – Description of Model Algorithms (EPA-454/B-95-003b).